

Patent  
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The applicant wishes to thank the Examiner for his comments with regards to the drawings and the specification. Applicant has, accordingly, amended the specification. With regards to Element 9 in the drawings, please see Figure 3, lower left side. Accordingly, it is believed that there is no requirement to further amend the drawings.

The present invention is in a relatively competitive field where numerous manufacturers are attempting to provide change or token dispensing devices of a relatively compact configuration at relatively low cost, while maximizing the amount of tokens that are to be dispensed. The present invention addresses these requirements by providing a capacity to use a smaller size electric motor while maintaining the same storage capacity in the storing bowl and lessening a force load on the dispensing rotating disk.

Reference can be made to our Paragraphs 0005-0007 in our Description of Related Art, to appreciate the problems addressed and resolved by the innovative design claimed herein.

The prior art, including the work of the present inventor Motoharu Kurosawa (U.S. Patent No. 6,569,006) has attempted to prevent what is known as coin bridging and an interlocking phenomena of coins or tokens, as can be seen in Column 6, Lines 15-18 of that disclosure.

The present inventor is herein proposing a design concept of a contrarian approach to that of the prior art. That is, to purposely create a storing bowl configuration relative to the size of the coins or tokens that are to be dispensed that can take advantage of one feature of the coin bridging phenomena. That is, when the coins are positioned in a quasi-jamming condition, they can actually reduce the total force load on the rotating disk, thereby reducing the amount of energy consumed by the dispensing process and enable the use of a smaller electrical motor.

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Thus, the present invention takes a different perspective on dispensing circular coins or tokens and the propensity under certain conditions for the coins to provide an interlocking or bridging configuration.

Certainly none of the references of record seek to intentionally create a quasi-jamming design by providing a convex portion to the storing bowl having a circular opening of a diameter of a specific range or ratio to the diameters of the coins or tokens that are to be dispensed. As taught in Paragraph 0031 of our specification, as follows:

[0031] The narrower diameter of the convex section allows tokens 10 in the storing bowl to be partially supported in a quasi-jamming condition, and reduces the load on the rotating disk 4. The quasi-jamming condition restricts the movement of tokens through the convex section thereby reducing the load on the rotating disk 4. The reduced loading on the rotating disk 4 allows the motor 5 to be smaller than conventionally required. Hence, the present invention is an energy saving device.

As can be seen from Paragraphs 0032 through 0034, the present inventor has defined a practical ratio of the diameter of an inner circular apex of the convex section to the diameter of the tokens that can be dispensed. Namely, the ratio of the diameter of the interior circular apex of the convex section to the diameter of the token is between approximately 3 to approximately 5.

The Office Action rejected Claims 1-14 and 16-21 under 35 U.S.C. §103 as being unpatentable over a combination of the *Hirano* (U.S. Patent No. 5,924,919) in view of *Raterman et al.* (U.S. Reissue Patent No. RE.34,934).

The *Hirano* reference is cited for disclosing a storage bowl with an upper section and a lower section. A rotating disk (24) was mounted within a cover member (26) and the storage bowl (32) is directly mounted on the cover member (26). See Column 4, Lines 39-43.

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As can be seen from Figure 1 and Figure 9, there are no restricted open circular convex sections purposely designed for impeding the flow of tokens from the hopper. Rather, the hopper of the *Hirano* disclosure has the coins mounted over a combination of the rotary disk (24), the coin feeding guide plate (40) and the coin receiving plate (38) as a unitary assembly where the weight of the coin's position thereon is diminished by the provision of an elastic plate (21) that can be elastically deformed to mitigate the force, thereby permitting the rotary disk to stably rotate. See Column 7, Line 62 through Column 8, Line 4.

Additionally, a thrust bearing (52) is utilized to support the weight on the rotary disk and the coin feeding guide plate (40) prevents any bending of the rotary disk, resulting from a large number of coins in the storage bowl (32). See Column 9, Lines 3-20.

A review of the claims confirms that the *Hirano* disclosure is directed to a sturdy composite configuration of the rotary disk coin feeding guide plate (40) and coin receiving plate (38) to prevent any jamming of the coins. See Column 9, Lines 50-58.

In summary, a person of ordinary skill in this field would be taught to use a composite form of a rotary disk assembly which has been particularly strengthened by the combination of the selected parts, the use of a thrust bearing, and the provision of an elastically deforming elastic plate to mitigate force. *Hirano* teaches a concave storage bowl with a rotary disk assembly receiving the full weight of the stored coins.

The Office Action further contended that the *Raterman et al.* reference could teach a storing bowl having an upper section and a lower section, with the lower section having a convex section as shown in Figure 4.

The *Raterman et al.* reference sought to solve a problem of any erroneous discharging of coins by permitting coins that are deposited on the top of the rotary disk (10) from being stopped

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in rotation in a precise manner by an improved braking mechanism. The disk in the embodiment not only of Figure 1, but also in the cited embodiment of Figure 4 has a resilient pad bonded to the top surface of a very solid metal disk. As noted in Column 3, the disk must remain flat.

"To provide such stability, the metal disk (18) must be made rigid and massive enough to withstand the pressure exerted thereon by the rotating coins as they are pressed down onto the pad (17) by the fixed guide plate (12)." Column 3, Lines 17-21.

As noted on Column 5, the embodiment of Figure 4 is similar to the embodiment of Figures 1-3 and its coin pad (104) corresponds to the resilient pad (17). The coin pad can be connected to a finned coin disk of high structural strength, and the concerns are associated not with coin jamming per se, but rather, providing a quick brake stop without putting any load on a speed reducing gear train to extend the life expectancy of the system. See Column 6, Lines 24-39.

As can be determined, there is no teaching in either the drawings nor the specification relative to providing a particular relationship between an opening in a convex section to the diameters of the coins or tokens to purposely attempt to create a quasi-jamming condition to remove weight from the rotary disk.

Each of the embodiments and explanations in the *Ratnerman et al.* reference are concerned with the braking force and providing various configurations of rigid coin receiving disks that will minimize any deflection to increase sorting accuracy. Thus, the various configurations of the coin disk are to provide the lowest weight while having the strongest coin disk, and thereby reduce the overall braking time of the coin disk.

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Thus, a person of ordinary skill in the art would recognize that the problem that is attempted to be solved by the *Raterman et al.* reference relates to accurate counting of coins with a high speed braking operation.

As noted in *In Re Pelton* (CCPA 1973) 179 U.S.P.2Q. 298:

"In this regard we do not disagree with the board's apparent conclusion that an intermediate structure made for the Sand's device could possess the characteristics called for in these claims. However, in view of the purpose for which the Sand's device is intended, it is apparent that it requires no critical dimension which would lead to a structure inherently having those characteristics. Therefore, it would be mere happenstance if any structure made according to Sands met the limitations of the claims. An accidental or unwitting duplication of an invention cannot constitute an anticipation. *Tilghman v. Proctor*, 102 U.S. 707 (1880); *Ebel Process Co. v. Minnesota and Ontario Paper Co.*, 261 U.S. 45 (1923). For this reason, we do not believe that Sands has 'identically disclosed or described' the invention as required of an anticipatory reference applied under section 102. The disclosure as a whole cannot be considered to sufficiently direct one skilled in the art to the invention which is a single drop dispenser requiring the critical dimensions."

Finally, the *Kurasawa et al.* (U.S. Patent No. 6,569,006) was combined with the *Hirano* and *Raterman et al.* references to reject Claims 15 and 19 as being obvious under 35 U.S.C. §103. The Office Action merely cited the abstract for a teaching which would prevent coin bridging and the coin interlocking phenomena in the hopper tank. As can be appreciated, this disclosure would teach away from purposely designing a quasi-jamming or coin bridging feature into the combination.

The *Kurasawa et al.* reference provides various projection members to prevent coin bridging, such as an elastic body (70) in the form of a coil spring projecting upward to stop coin bridging and the interlocking phenomena. There is also a teaching in Figure 11 of the use of an elastic rod (7) made of rubber and installed to trail in the disk (52) and ride on an outer peripheral portion of the disk to agitate the coins.

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The hopper bowl itself has a level difference as can be seen in Figure 5, with two sloping divisions (14,15) integrally formed with a step portion S. Needless to say, this structure is not directed to any convex section, nor does it teach any relationship between the convex section opening and the diameters of the tokens to be dispensed. In fact, a person of ordinary skill in the art from this reference, would simply be reinforced in the concept that you must prevent coin bridging, and the *Kurasawa et al.* reference shows some configurations to accomplish this purpose.

As can be appreciated, none of the cited references recognizes an important feature of the invention as set forth in our claims which is a structure to encourage a quasi-jamming or coin bridging effect in order to utilize a smaller electric motor. This issue is not recognized nor discussed in any of the references of record. In fact, the references of record collectively would teach away from encouraging this quasi-jamming condition of bridging adjacent tokens.

In examining an application, the Examiner by necessity must first review the teachings of the specification and drawings and then must accomplish the difficult task of disassociating that teaching as the template or direction in which to be motivated to combine references.

Even, if hypothetically, the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Fritch*, 23 USPQ 2d 1780, 1783-84 (Fed. Cir. 1992).

[T]he level of skill in the art is a prism or lens through which a judge or jury views the prior art and the claimed invention. This reference point prevents these deciders from using their own insight or, worse yet, hindsight, to gauge obviousness. Rarely, however, will the skill in the art component operate to supply missing knowledge or prior art to reach an obviousness judgment. Skill in the art does not act as a bridge over gaps in substantive presentation of an obviousness case, but instead supplies the primary guarantee of objectivity in the process. *AI-Site Corp. v.*

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*VSI International, Inc.*, 50 U.S.P.Q.2d 1161 (Fed. Cir. 1999) (citations omitted).

The Federal Circuit has addressed this issue in the case of *In re Rouffet*, 47 U.S.P.Q.2d 1453, 149 F.3d 1350 (Fed. Cir. 1998). In *Rouffet*, the Court noted that virtually all inventions are combinations of old elements. It concluded that:

an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be 'an illogical and inappropriate process by which to determine patentability.' *Id.* at 1357.

The Court pointed to the absence of any teaching *in the cited references* for making the proposed modifications, and found that the Board had *reversibly erred* in determining that the invention was rendered obvious because there was no identification of motivation to choose the selected feature.

Thus, one highly relevant inquiry in making an evaluation under 35 U.S.C. §103 is "[t]he relationship between the problem which the inventor... was attempting to solve and the problem to which any prior art reference is directed." *Stanley Works v. McKinney Mfg. Co.*, 216 USPQ, 298, 304 (Del. D.C. 1981). In analyzing the prior art under Section 103 of the Act, we must clearly comprehend the problem addressed by the present inventors and that problems must be compared or contrasted, as the case may be, with the problems addressed by the prior art.

Pursuing further the "problem" analysis required under Section 103 of the U.S. Patent Act, the applicability of any reference against the claims of a pending U.S. patent application requires compliance with *In re Gibbons*, 100 U.S.P.Q. 298, where it is stated:

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In considering the questions of invention, it is necessary to determine whether or not the art relied upon contains adequate direction for the practice of the invention without resort to the involved application. (Emphasis added)

In *Orthopedic Co., Inc. v. United States*, 217 USPQ 193 (C.A.F.C. 1983), the Federal Circuit set forth a useful guide for determining the scope and content of the prior art. *Orthopedic*, at pages 196-197, also focuses on the "problem" faced by the inventors:

In determining the relevant art. . . one looks at the nature of the problem confronting the inventor.

\* \* \*

[W]ould it then be nonobvious to this person of ordinary skill in the art to coordinate these elements in the same manner as the claims in suit? The difficulty which attaches to all honest attempts to answer this question can be attributed to the strong temptation to rely on hindsight while undertaking this evaluation. It is wrong to use the patent in suit [the patent application before the Examiner] as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit. Monday morning quarterbacking is quite improper when resolving the question of nonobviousness. (Emphasis added)

It is respectfully submitted that a person of ordinary skill in this field, in reviewing the problems addressed by each of the three applied references, would not recognize nor attempt to solve the problem addressed by our invention in the manner set forth in our current claims. The problems of the prior art patents can be compared and contrasted with the problems addressed by the present invention and the manner in which it is solved. A purposeful intent to create a quasi-jamming condition to relieve weight of the disk and thereby enable the use of a less powerful electric motor is certainly not recognized, taught nor suggested by any of the cited references.

The only objective conclusion would be that these references could only have been cited piecemeal, and in unconscious hindsight from our present teaching. Even if hypothetically

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combined, these three patents cannot teach the parameters set forth in our current claims. We provide a ratio of diameter of the tokens to a diameter of a circular opening at the apex of the convex section of within a range of approximately 3 to approximately 5 times the diameter of the tokens. This feature, along with the other features defined in our claims, more than adequately provide a structural distinguishing feature.

It is believed that the application is allowable and an early notification of the same is requested.

If the Examiner believes a telephone interview will help further the prosecution of this case, he is respectfully requested to contact the undersigned attorney at the listed phone number.

I hereby certify that this correspondence is being transmitted via facsimile to the USPTO at 571-273-8300 on July 25, 2006.

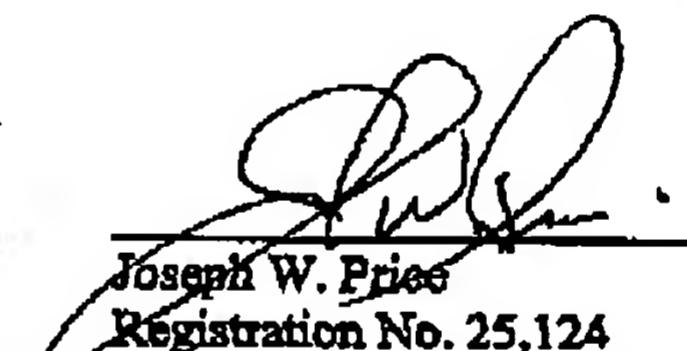
Very truly yours,  
SNELL & WILMER L.L.P.

By: Sharon Farnus

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Signature

Dated: July 25, 2006

  
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